Harley Parfitt

Air Quality Consultant
MSc BSc Hons MIAQM

I have significant experience in preparing air quality and odour assessments for major developments, including urban extensions, data centres and mixed-use developments. These assessments were carried out using screening tools such as the DMRB and detailed modelling packages such as ADMS-roads and ADMS-5. I have substantial expertise in using ADMS-roads to support local authorities produce Air Quality Action Plans as part of their responsibilities under the Local Air Quality Management (LAQM) regime.

I also have a strong understanding of data analytics and the use of artificial intelligence to interrogate pollution time-series datasets and have experience in undertaking analysis and visualisation of results in R, Python and Tableau.

Work Experience

Greenavon
Freelance Air Quality Consultant
06/22- present

Freelance air quality consultant specialising in air quality and odour assessments for planning and permitting.

Phlorum Ltd.
*Senior Air Quality Consultant
(Head of Air Quality)*
09/21 - 05/22

Senior Air Quality Consultant
11/19 - 09/21

Experiences included, but were not limited to:

- Undertaking city scale air quality assessments for proposed Clean Air Zones (Reading) and Air Quality Action Plan interventions such as Bus LEZs (Lewes District Council) and traffic management system options (Reading Borough Council);

- Undertaking air quality assessments for Nationally Significant Infrastructure Projects (NSIP) and providing the air quality chapters for Environmental Statements;

- Source apportionment study of road emissions across Northampton Borough.

- Diffusion tube and road scheme dust monitoring.

- Providing air quality and low emission strategy advice to clients including the design and implementation of mitigation strategies for a range of developments

- Training colleagues in air quality consultancy and the use of dispersion models (ADMS-5 and ADMS-roads);

- Guest lecturer at Brighton University.

Phlorum Ltd.

Air Quality Consultant
01/18 - 11/19

Assistant Air Quality Consultant

05//17 - 01/18

Responsibilities included, but were not limited to:

- Air quality monitoring;

- Producing emission inventories';

- Undertaking detailed assessments of point sources emissions for crematoria, backup emergency generator systems, Data Centres, STOR and incinerators, both in the UK and abroad;

- Emission mitigation assessments/ damage cost assessments;

- Odour surveys and odour modelling;

- Project management and job tendering;

- Leading on detailed odour assessments, including those for Environmental Permits and Local Plans; and

- Dust and odour management plans.

Education and Qualifications

MSc (Distinction)   *Data Science (University of Sussex) 2021* - Machine Learning, Data Analysis Techniques, Natural Language Processing, Data Science Research Methods, Genomics and Bioinformatics.

Authored a dissertation investigating the risk factors and symptomatology of Long Covid, using data from the Covid symptom study app.

BSc - 2:1   *Geography – with a year abroad in continental Europe (University of Bristol) 2015*
Hydrology, Cryosphere, Environmental Change, Spatial Modelling.

Authored a 13,000 word dissertation on the biogeography of microbes beneath glaciers. The project was a meta-analysis based upon over 15 other studies collated online, the analytical framework was developed independently through extensive research of the wider biogeographic literature. The project required good time management, the ability to problem solve and an adaptability as problems were often confronted.

3 A Levels, 1 AS   Chemistry, Biology, Geography (A*,A* and A ;2011), Maths, (B)

Volunteering

International Citizen Service Volunteer

As part of the International Citizen Service (ICS) programme, I spent three months working on a women's empowerment project in rural Malawi. The project involved collaborating with the Nase Women's group, helping them to develop a series of income generating activities that would support the local nursery school. I graduated from the programme by running a marathon and raising money for the International Tree Foundation. In addition, I donated my time to The Brighton Unemployed Centre where I specialized as an IT support worker.

Projects

During the first UK Covid-19 lockdown, I started researching how air quality had changed in Sussex as a result. This research culminated in an [academic paper](#) as well as guest lectures at Brighton University.

Key I.T. Skills

- Microsoft Office
- ADMS-Roads
- ADMS-5
- R
- GIS (Manifold)
- Python

Languages

French (Intermediate) - I spent an academic year studying at the Univerisité Joseph Fourier (now Université Grenoble Alpes) where I averaged a First-Class honour across the year.

Data Visualisation

This page provides examples of the type of outputs that I could produce as part of pollution time-series data analysis. Further examples of the types of plots that could be produced can be found [here](#).

Polar Plots
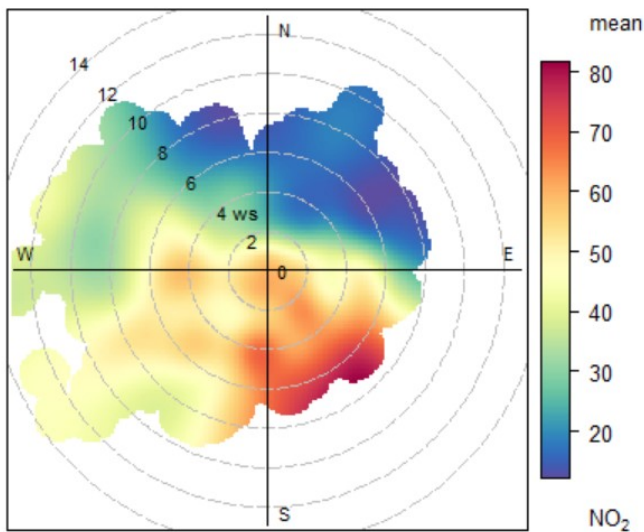
The above plot shows from what wind direction and speed the highest pollution concentrations were recorded at the London Marylebone air quality supersite. In the figure above, the highest concentrations could be recorded when winds were blowing from the south-east and between 4-8m/s. There is a wide range of concentrations where high concentrations can be recorded suggesting a road source (pollution from a chimney would only be detected in a narrow range of wind directions, at a particular location).

Time Variation Plots
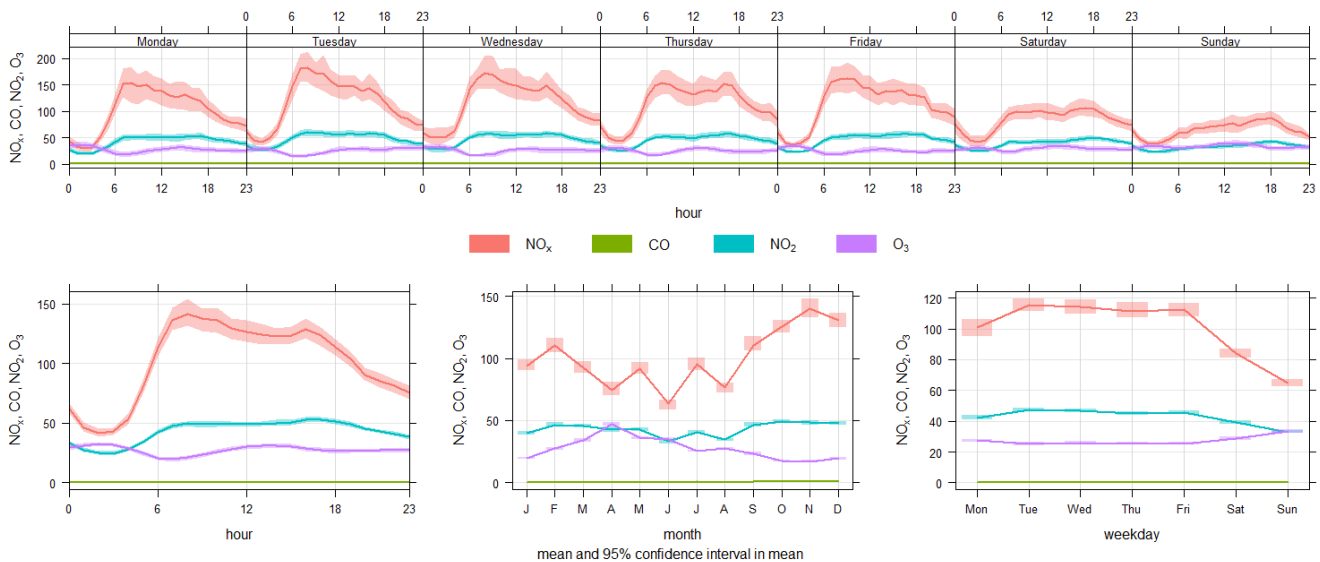
The time variation plots above show how concentrations of NO_x, NO_2 and O_3 vary by day of the week, hour and month and can be produced with one line of code in R's Openair.

Source Apportionment Map

With an appropriate level of input data (e.g. traffic ANPR data), maps showing the key sources on particular road links can be developed to help inform policy. An example (I admit it is rough), can be found on my Tableau Public [page](#).